

IN THE CLAIMS

Please amend the claims as indicated.

- 1 1. (currently amended) A method of obtaining a parameter of interest of an earth
2 formation using a tool conveyed within a borehole in the earth formation, the tool
3 having a body with a finite, non-zero conductivity, said method comprising:
4 (a) using a transmitter on the tool for producing a first electromagnetic signal
5 in the earth formation;
6 (b) using at least one receiver axially separated from said transmitter on said
7 tool for receiving a second ~~temporal~~ transient signal resulting from
8 interaction of said first signal with the earth formation, said second
9 ~~temporal~~ transient signal dependent upon said conductivity and said
10 parameter of interest; and
11 (c) ~~using a processor for obtaining~~ determining from said second signal a
12 third ~~temporal~~ transient signal indicative of said parameter of interest and
13 substantially independent of said conductivity.

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- 1 2. (original) The method of claim 1, further comprising using said processor for
2 determining from said third signal said parameter of interest.

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1 3. (original) The method of claim 1, wherein said parameter of interest is at least one
2 of (i) a resistivity of said formation, and, (ii) a distance to a bed boundary in said
3 formation.

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1 4. (currently amended) The method of claim 1, wherein a sensitivity of said third
2 ~~temporal-transient~~ signal to said earth formation is substantially independent of a
3 spacing between said transmitter and said at least one receiver.

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1 5. (original) The method of claim 4, wherein said spacing between said transmitter
2 and said at least one receiver is approximately 2 meters.

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1 6. (currently amended) The method of claim 1, wherein using said processor in (c)
2 further comprises representing said second signal by a time domain Taylor series
3 expansion.

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1 7. (original) The method of claim 6, wherein said Taylor series expansion is in one
2 half of odd integer powers of time.

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1 8. (original) The method of claim 7, further comprising subtracting from said second
2 signal at least one leading term of the Taylor series expansion.

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1 9. (original) The method of claim 1, wherein using said processor in (c) further
2 comprises applying a filter operation to said second signal.
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1 10. (original) The method of claim 9, wherein said filtering operation further
2 comprises a differential filtering operation.
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1 11. (original) The method of claim 10, wherein said differential filtering operation is
2 of the
3 form

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$$\frac{\partial(t^{1/2}H_z)}{\partial t}$$

5 wherein t is time and H_z is a representation of said second signal.
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1 12. (original) The method of claim 9, wherein said filtering operation further
2 comprises an integral filtering operation.
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1 13. (original) The method of claim 12, wherein said integral filtering operation further
2 comprises defining a first and a second specified time.
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1 14. (original) The method of claim 1 wherein said tool is conveyed into the earth
2 formation on one of (i) a drilling tubular, and, (ii) a wireline.

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- 1 15. (currently amended) A system for determining a parameter of interest of an earth
2 formation having a borehole therein, comprising:
- 3 (a) a tool ~~for use~~ used within said borehole, said tool having a body with a
4 finite, non-zero conductivity;
- 5 (b) a transmitter ~~for producing which~~ produces a first electromagnetic signal
6 in the earth formation;
- 7 (c) at least one receiver axially separated from said transmitter on said tool ~~for~~
8 ~~receiving which receives~~ a second ~~temporal~~ transient signal resulting from
9 interaction of said first signal with the earth formation, said second
10 ~~temporal~~ transient signal dependent upon said conductivity and said
11 parameter of interest; and
- 12 (d) a processor ~~for obtaining which determines~~ from said second signal a third
13 ~~temporal~~ transient signal indicative of said parameter of interest, said
14 third transient signal ~~and~~ substantially independent of said conductivity.

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- 1 16. (original) The system of claim 15, wherein said processor determines from said
2 third signal said parameter of interest.

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- 1 17. (original) The system of claim 15, wherein said parameter of interest is at least
2 one of (i) a resistivity of said formation, and, (ii) a distance to a bed boundary in
3 said formation.
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- 1 18. (currently amended) The system of claim 15, wherein a sensitivity of said third
2 ~~temporal~~ transient signal to said earth formation is substantially independent of a
3 spacing between said transmitter and said at least one receiver.
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- 1 19. (original) The system of claim 18, wherein said spacing between said transmitter
2 and said at least one receiver is approximately 2 meters.
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- 1 20. (currently amended) The system of claim 15, wherein said processor represents
2 said second signal by a time domain Taylor series expansion.
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- 1 21. (original) The system of claim 20, wherein said Taylor series expansion is in one
2 half of odd integer powers of time.
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- 1 22. (original) The system of claim 21, wherein said processor further subtracts from
2 said second signal at least one leading term of said Taylor series expansion.
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1 23. (currently amended) The system of claim 15, wherein said processor ~~is~~ further
2 applies a filtering operation to said second signal.
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1 24. (original) The system of claim 23, wherein said filtering operation further
2 comprises a differential filtering operation.
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1 25. (original) The system of claim 24, wherein said differential filtering operation is
2 of the form

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$$\frac{\partial(t^{1/2}H_z)}{\partial t}$$

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wherein t is time and H_z is a representation of said second signal.

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1 26. (original) The system of claim 23, wherein said filtering operation further
2 comprises an integral filtering operation.
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1 27. (original) The system of claim 26, wherein said integral filtering operation further
2 comprises defining a first and a second specified time.
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1 28. (currently amended) The system of claim 15 further comprising a drilling tubular
2 ~~for conveying~~ which conveys said tool into the earth formation.

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1 29. (currently amended) The system of claim 15 further comprising a wireline ~~for~~
2 ~~conveying~~ which conveys said tool into the earth formation. *

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